

CLAIMS

1. A light emitting device having formed therein a light emitting layer section based on a double heterostructure in which a p-type cladding layer, an active layer and an n-type cladding layer, individually composed of a $\text{Mg}_a\text{Zn}_{1-a}\text{O}$ ($0 \leq a \leq 1$) type oxide, are stacked in this order, the device using a face on the n-type cladding layer side as a light extraction surface, and having, as being provided on the main surface on the light extraction surface side of the n-type cladding layer, an n-type low resistivity layer composed of a $\text{Mg}_a\text{Zn}_{1-a}\text{O}$ ($0 \leq a \leq 1$) type oxide, and having a content of an n-type dopant larger than that in the n-type cladding layer.

2. The light emitting device as claimed in Claim 1, having a metal bonding pad provided so as to cover a part of the main surface of the n-type low resistivity layer.

3. The light emitting device as claimed in Claim 1 or 2, wherein the n-type low resistivity layer has an effective carrier concentration of $1 \times 10^{17}/\text{cm}^3$ to $1 \times 10^{20}/\text{cm}^3$, both ends inclusive.

4. The light emitting device as claimed in Claim 3, wherein the n-type low resistivity layer has an n-type dopant concentration of $1 \times 10^{17}/\text{cm}^3$ to $1 \times 10^{20}/\text{cm}^3$, both ends inclusive.

5. The light emitting device as claimed in any one of Claims 1 to 4, wherein the n-type low resistivity layer contains, as the n-type dopant, one of, or two or more of B, Al, Ga and In.

5 6. The light emitting device as claimed in any one of Claims 1 to 5, wherein the n-type low resistivity layer is grown as a $\text{Mg}_a\text{Zn}_{1-a}\text{O}$ -type oxide layer by MOVPE process, while incorporating therein the n-type impurity in the growth step.

10 7. The light emitting device as claimed in any one of Claims 1 to 5, wherein the n-type low resistivity layer is obtained by initially being grown in vapor phase in a form of a $\text{Mg}_a\text{Zn}_{1-a}\text{O}$ -type oxide layer having an n-type dopant concentration lower than the final n-type dopant concentration, and then by allowing the n-type
15 dopant to additionally diffuse therein from the main surface of the layer.

 8. The method of fabricating a light emitting device as claimed in any one of Claims 1 to 7, wherein, in the process of
20 formation of the light emitting layer section having a double heterostructure by growing, in vapor phase, the p-type cladding layer, the active layer and the n-type cladding layer, individually composed of a $\text{Mg}_a\text{Zn}_{1-a}\text{O}$ ($0 \leq a \leq 1$) type oxide, sequentially in this order, the device after formation of the p-type cladding layer is
25 annealed in an oxidative gas atmosphere, and the active layer and

the n-type cladding layer are then grown in vapor phase.